

DUTY CYCLE CALCULATION - TRANSMITTER MESSAGE TIMING

The data output is phase-encoded Manchester that has inherent 50% duty cycle and consists of 64 bits per word. The 6128RF-2 is not supervised, and only sends user initiated messages. The 6128RF-2 uses the microprocessor U2 to generate the message.

Each user initiated message, is just like the 5827BD (FCC ID: CFS8DL5828BD) and has a nominal data rate of 3.7 kb/s (3.2kb/s min to 4.2kb/s max).

Therefore the duty cycle calculation is as follows:

The word format consists of 64 bits,
The duration of each bit is 312.5 uSec max.

The duty cycle over a 100 mSec measuring period is calculated as follows:

Duty cycle = Actual RF transmission ON time / 100 mSec
Actual transmission ON time = 64 bits X 50% X 312.5 uSec = 10 mSec

Therefore duty cycle = 10 / 100 mSec = .10 = 10%, and peak to average field strength is 20 db.